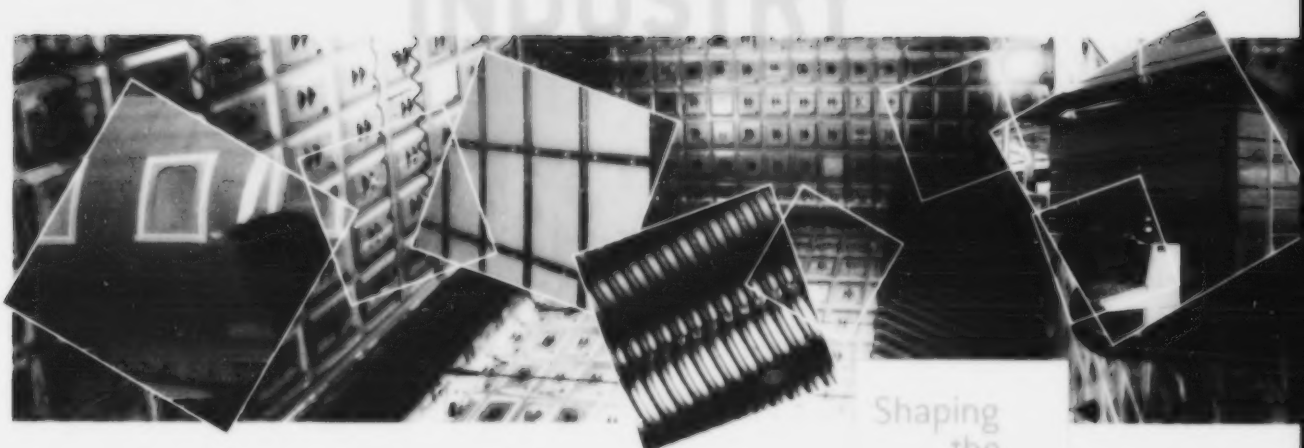


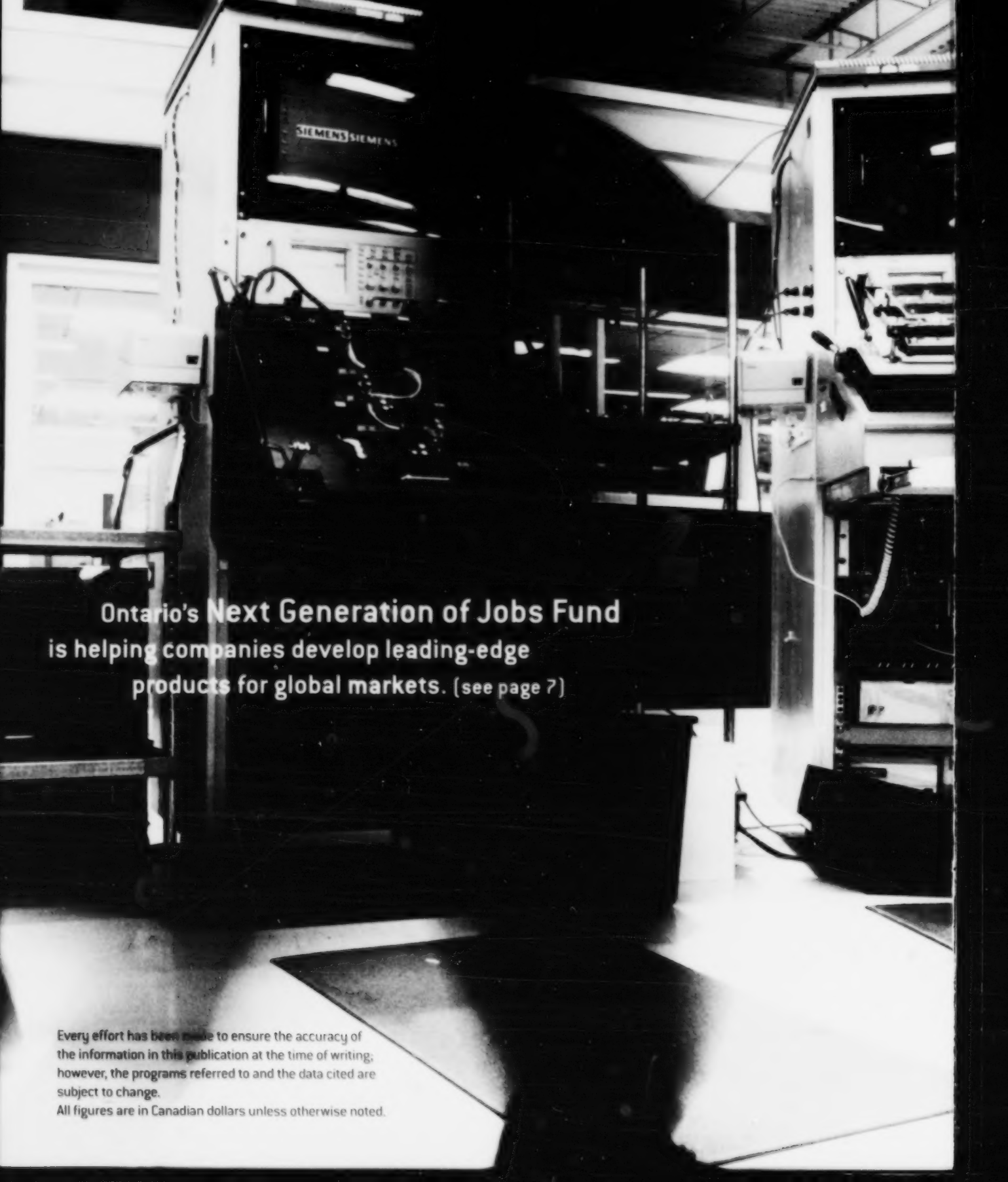
# ONTARIO'S ADVANCED MANUFACTURING INDUSTRY



Shaping  
the  
FUTURE



ONTARIO  
CANADA



Ontario's Next Generation of Jobs Fund  
is helping companies develop leading-edge  
products for global markets. (see page 7)

Every effort has been made to ensure the accuracy of the information in this publication at the time of writing; however, the programs referred to and the data cited are subject to change.  
All figures are in Canadian dollars unless otherwise noted.



**Fast Fact:** Ontario has a strong and diverse manufacturing sector that includes automotive, telecommunications, computers and electronics, aerospace, chemicals, plastics, transportation and food processing which drives the province's advanced manufacturing technologies sub-sector.

# THE ONTARIO ADVANTAGE

IDENTIFYING A LOCATION FOR A NEW MANUFACTURING FACILITY IS A BALANCING ACT: YOU HAVE TO FIND THAT "SWEET SPOT" WHERE A MYRIAD OF FACTORS COMBINE TO WORK TO YOUR COMPANY'S COMPETITIVE ADVANTAGE, NOW AND IN THE FUTURE.

You need a cost competitive location, but you must be close to key customers and growing markets. You need a skilled and educated workforce, yet you must keep labour costs in line. You must weigh the city, state/provincial and national economic development incentives against their regulations and tax structure.

You need access to information and transportation infrastructure and available serviced land, but the taxes can't be onerous.

And, more and more, you need to find an innovative culture that provides you with the tools you need to stay at the leading edge.

## ONTARIO—A HUB FOR ADVANCED MANUFACTURING

For an increasing number of advanced manufacturers—leading companies from Asia, Europe and the U.S.—Ontario is that sweet spot.

Ontario has become a destination of choice because it's a manufacturing powerhouse, with the people, the resources and the location that are essential for success in today's competitive economy.

We understand your needs—we've been building components, assemblies and systems for customers around the world for more than 150 years—and we can provide a competitive edge to keep you creative, flexible and nimble.

Discover why successful companies from all industries—multinationals like Toyota, Northrop Grumman, Messier-Dowty, GlaxoSmithKline, Siemens and sanofi pasteur—have chosen Ontario and why you should come and grow your business here.



**Fast Fact:** Canada ranks #1 in the G7 as the best place to invest and do business through to 2013, according to the *Economist Intelligence Unit's* global business rankings forecast.

# MHI AEROSPACE SOARS IN ONTARIO

For MHI Canada Aerospace the stakes couldn't be higher. A subsidiary of Japan-based Mitsubishi Heavy Industries, MHI opened its only production facility outside Japan in the Greater Toronto Area (GTA) in September 2007 with a clear mandate: perform as well—if not better—than the company's Japanese facility, or production returns to Japan. So far, the Ontario-based facility has exceeded expectations. In fact, it's already expanded once, is in the process of installing a new assembly line and will add method and production planning capabilities in the future. The 90,000 sq. ft. facility employs 200 workers who make wings for Bombardier's Global Express and Challenger 300, both high-speed business jets. "We selected the GTA because it provided us with the highly skilled workers we need—many of them from around the world, which is also an asset—a facility that fit the bill and proximity to our client," says Shoji Amano, MHICA's president. "This is the first trial for MHI Aerospace outside Japan in more than two decades and we've demonstrated manufacturing quality and efficiency."

**AN EXCEPTIONAL WORKFORCE** TOPPING THE LIST OF REASONS LEADING MANUFACTURERS CHOOSE ONTARIO IS OUR WORKFORCE. MANUFACTURERS KNOW THAT THEIR BUSINESSES SUCCEED OR FAIL BASED ON THE QUALITY, COMMITMENT, SKILLS AND KNOWLEDGE OF THEIR PEOPLE—AND THEY RECOGNIZE THAT OUR WORKERS ARE THE BEST IN THE BUSINESS, FROM THE PLANT FLOOR TO THE RESEARCH LAB TO THE EXECUTIVE SUITE.

Ontario's manufacturing sector employs one million workers—that's second only to California. Overall 59% of Ontarians (25-64 years of age) have completed their post-secondary education, a higher percentage than any G7 nation, according to the Organization for Economic Co-operation and Development (OECD).

## COMMITTED AND COST COMPETITIVE

As well as being highly trained, our manufacturing workers are dedicated to their jobs and dependable. On average, Ontario workers stay with a company for close to nine years and that means reduced training costs for employers.

## ONTARIO LABOUR COSTS ARE HIGHLY COMPETITIVE

### Machinist

Ontario	US \$42,574
St. Louis, MO	US \$44,080
Grand Rapids, MI	US \$44,582

Source: The Geographic Reference Report 2007



9332

**Fast Fact:** New government programs have increased the number of apprentices in high-demand areas to 26,000 a year.



The North American advanced manufacturing industry is transforming itself and that's creating a demand for workers with the ability to transfer their skills to new high-demand sectors. The Ford Centre for Excellence in Manufacturing at St. Clair College in Windsor is responding with a teaching facility unique in North America. The \$40 million+, 100,000 sq. ft. facility—which accommodates 1,300 full-time, part-time and apprenticeship students at any given time—includes shop floor labs fitted with state-of-the-art equipment, including CNC and Axis machines, rapid prototyping, wire EDM, high end CAD/CAM software and an industrial automation line. Incorporating the "best of the best" from industry, the centre has been designed to move the students from classroom to industrial setting seamlessly, training them in everything from product design, to CAD/CAM industrial automation to power engineering technology. "We're equipping people with the right skills and knowledge to help our manufacturing industry maintain flexible and efficient operations, which is crucial for their success in the new economy," says Dr. Peter Tumidajski, Vice President, Academic, St. Clair College.

## THE FORD CENTRE FOR EXCELLENCE IN MANUFACTURING TRAINS TOMORROW'S WORKERS



## BUSINESS IN ANY LANGUAGE

Ontario is home to people who speak more than 100 languages, which means we can work with customers and suppliers in their own language virtually anywhere in the world, making global sourcing, service and sales flow smoothly.

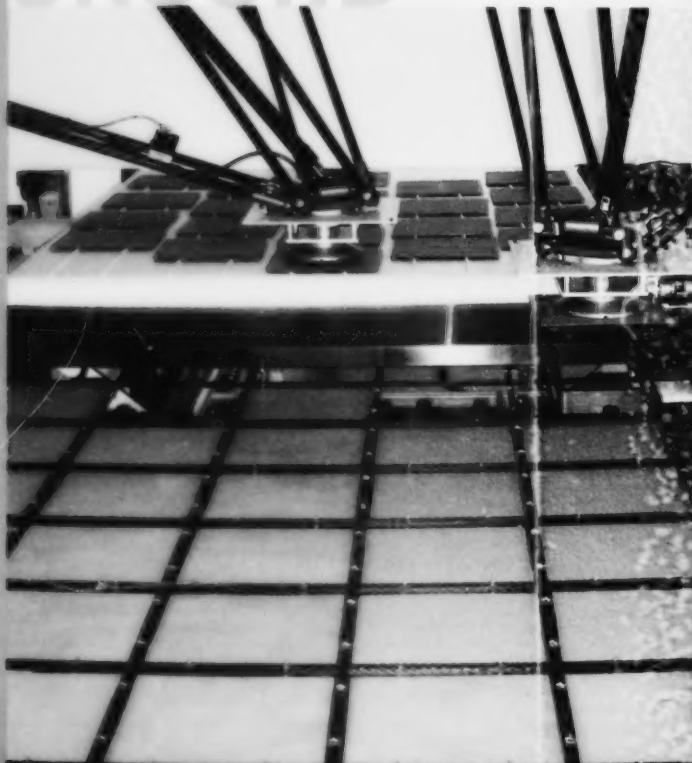
And while many other jurisdictions worry about a coming skills shortage, we've taken steps to ensure a steady supply of industry-ready workers. Ontario's 44 universities and colleges have thousands of students enrolled in degree and certificate programs in all facets of advanced manufacturing, as well as business management. And our extensive apprenticeship and co-operative programs give students critical, real-world experience.



**Fast Fact:** Ontario's Apprenticeship Training Tax Credit gives companies a 35% refundable tax credit on salaries and wages for new apprentices for the first 48 months of a qualified apprenticeship program to a maximum value of \$40,000.

Meikle Automation made business headlines in 2002 when it developed a world-leading system for automated fibre optic component assembly. Well-known as a designer and builder of high precision automation systems for a variety of industries including life science, automotive, and telecommunications, Meikle's ability to make the photonics assembly process as advanced as the products themselves was a real breakthrough. Now the Kitchener-based company is doing the same thing for the photovoltaic market. Meikle has developed a system for handling and inspecting silicon wafers, which are the thickness of a sheet of paper and as fragile as glass and need to be processed at a rate of 3,600 pieces an hour. How has Meikle stayed successful in an industry that's changing rapidly? "We're constantly analyzing the market and looking for sectors that are a fit," says Shawn Smith, Meikle's vice president of sales and marketing. "That goes hand-in-hand with having an exceptional workforce and R&D team, the products of Ontario's first-class universities, colleges and trades programs. And the fact that many of them are culturally diverse is a real asset for us, given that our clients are global."

# MEIKLE AUTOMATION BREAKS NEW GROUND



"Innovation is at the heart of our success," says Siemens Milltronics' president and CEO Dave Bignell. The Peterborough, Ontario-based firm is a world leader in level measurement using ultrasonic, radar, capacitance and other technologies. Its products are used in industries ranging from chemical, to water and wastewater, to mining. The company's track record for breakthrough technologies goes back to its beginnings in 1954, when it was known as Milltronics. It was that track record, together with the company's market leadership, that captured the attention of German-based Siemens in 2000 when it was searching the world for a level measurement business. Since then, with the power of a major parent company behind it, Siemens Milltronics has released more than 80 new products or major product enhancements—this, with an R&D team of 75. "We're in a knowledge-based industry and our knowledge is our people," says Bignell. "We're fortunate to be located in Ontario where we can staff our R&D centre with the best and brightest from the province's colleges and universities and from other leading institutions around the world as well."

**AT THE LEADING EDGE** DEVELOPING NEW MATERIALS, PRODUCTS AND PROCESSES THAT HELP KEEP ADVANCED MANUFACTURERS COMPETITIVE REQUIRES RESEARCH AND TESTING. ONTARIO HAS BECOME AN R&D LOCATION OF CHOICE FOR INDUSTRY LEADERS FROM AEROSPACE TO AUTOMOTIVE, MINING TO INFORMATION TECHNOLOGY.

Why? Because R&D talent is plentiful, costs are low and our research centres are focused on applied research that meets the needs of today's industry.

#### COLLABORATIVE BUSINESS- GOVERNMENT ENVIRONMENT SPURS INNOVATION

The Ontario government has made R&D—and its commercialization—a priority, with a total investment of almost \$3 billion over eight years.

There are thousands of scientists working at 34+ renowned public research facilities across the province that are focused on all aspects of advanced manufacturing from materials design and development to robotics and manufacturing automation.

And the Centre of Excellence for Materials and Manufacturing helps companies develop commercial applications for groundbreaking discoveries made at our public research labs.

Our R&D tax incentive program is also widely recognized as one of the most generous in the world. When tax credits are factored in, \$100 in R&D expenditures can be reduced to less than \$36. A broader range of costs qualify for deductions than in many jurisdictions, and tax credits can be carried forward for 20 years.



**Fast Fact:** MBA programs at the University of Toronto, Queen's, Western and York consistently rank among the best internationally in polls conducted by *Business-Week*, *Forbes* and the *Wall Street Journal*.



**Fast Fact:** Ontario's knowledge network produces 29,000 graduates a year in the manufacturing critical fields of mathematics, engineering and science.



# INNOVATION DRIVES SIEMENS MILLTRONICS



## FOCUS ON GREEN MANUFACTURING R&D

With countries around the world tightening their environmental regulations, smart manufacturers are developing products and processes that have a reduced environmental impact. Ontario—and Ontario-based companies—are in the forefront of this green revolution.

Often working closely with publicly funded researchers, our advanced manufacturers are developing lighter, stronger, more efficient next-generation materials and products, as well as advanced automation processes.

And Ontario is looking to partner with manufacturers who see the green revolution and the emergence of transformative technologies as opportunities to win significant shares in global markets.

Ontario's \$1.15 billion Next Generation of Jobs Fund is a five-year strategy that can help innovative advanced manufacturing companies expand by developing cleaner, greener products and technologies. Support is available for high impact, large-scale (\$25 million+) projects in job-creating, knowledge-intensive areas such as:

- green auto research, parts production and assembly

- clean fuels research, development and commercialization
- environmental technologies, clean industries and bio-economy
- digital media and information and communications technology
- pharmaceutical and biotechnology research and manufacturing.

## MORE COSTS QUALIFY FOR R&D TAX CREDITS IN ONTARIO

	Ontario	United States
Wages and salaries	✓	
Capital equipment	✓	✓
Materials	✓	
Overhead	✓	✓
Consulting fees	✓	65% – 75%

Ever since the McMaster Manufacturing Research Institute (MMRI) opened its doors in 2001, it's been advancing Ontario manufacturing through novel approaches. MMRI is one of the largest university based manufacturing research centres in North America. Combining research excellence with state-of-the-art equipment, MMRI specializes in making the seemingly impossible, possible, which is why it has become the research centre of choice for innovative advanced manufacturers. The 15,000 sq. ft. facility houses 13 industrial machines, robots and metrology equipment and is designed to meet the sophisticated R&D needs of leading manufacturers in the polymer processing, automotive and aerospace industries, as well as the tool, die and mold industry. "Our goal is to provide single-point shopping for manufacturer's R&D," says the centre's director Dr. Stephen Veldhuis. "Our services run the gamut from materials and process development to prototyping and testing."

## MMRI ADVANCES MANUFACTURING THROUGH NOVEL APPROACHES



**A GLOBALLY COMPETITIVE BUSINESS ENVIRONMENT** WE'VE HAD AN ADVANCED MANUFACTURING INDUSTRY FOR MORE THAN 150 YEARS, SO WE KNOW THAT WHEN COMPANIES ARE LOOKING FOR A PLACE TO INVEST, THEY NEED TO BE SURE THAT EVERYTHING THEY REQUIRE IS IN PLACE. THAT INCLUDES A SKILLED WORKFORCE, A SOPHISTICATED SUPPLY BASE, ADVANCED TRANSPORTATION AND COMMUNICATIONS INFRASTRUCTURES, AVAILABLE SERVICED LAND AND EXPERIENCED ECONOMIC DEVELOPMENT PERSONNEL.

#### ONTARIO'S COST ADVANTAGE

Manufacturing costs are lower in Canada than in the U.S., the U.K., France, Germany, Italy or Japan according to a comprehensive comparison of international business costs by KPMG that was released in 2008.

Part of it is due to our publicly funded health care system. Employee health care benefits cost Ontario manufacturers about half as much as their U.S. counterparts.

Ontario's current combined federal-provincial corporate income tax (CIT) rates for general corporations and manufacturers are almost seven percentage points below the average rate of its main trading partners, the Great Lakes States. And by 2013, the proposed CIT reductions would make Ontario's combined CIT rate 15 percentage points lower than the U.S. average combined federal-state general CIT rate and more than 11 percentage points below the U.S. average combined manufacturing rate.

#### ONE WINDOW SERVICE

We know it's a major commitment of time and resources to set up business in a foreign jurisdiction. That's why we provide one window service.

When a company contacts the Ontario Investment and Trade Centre, it's assigned an experienced business consultant to liaise with all levels of government and service providers to assist with the coordination of the necessary transportation infrastructure, power supply, telecommunications, medical facilities and training programs.



**Fast Fact:** There are 375+ advanced manufacturing technology (AMT) firms in Ontario providing innovative manufacturing techniques and processes.

## STREAMLINED REGULATIONS

We also understand that companies need to get on with growing their business, which is why we make it possible for them to get up and running quickly. The necessary infrastructure—buildings, transportation, telecom—is in place. And our regulatory systems are streamlined. Business start-ups in Ontario require just one simple step, compared to as many as nine in other industrialized countries.

International companies opening a new office or already doing business in Ontario can take advantage of Canada's intra-company transfer work permit, which allows them to send key staff to their Ontario branch.

## INNOVATION-ORIENTED GOVERNMENT

The Ontario government is serious about attracting manufacturing investment. We have a \$500 million Advanced Manufacturing Investment Strategy that offers interest-free loans to help companies adopt innovative technologies that will put them at the leading edge of global manufacturing. Among the companies that have benefited from this program so far are Kellogg, Procter & Gamble and FAG Aerospace.

Finally, with 12.5 million+ people Ontario is big enough to support a broad base of manufacturing, financial and business services—yet small enough that global investors can get things done quickly.



**Fast Fact:** Over the next five years, we'll spend \$3.4 billion on upgrades to the transportation infrastructure in southern Ontario that's essential for our advanced manufacturing industry.

# HANWHA GROUP CHOOSES LONDON, ONTARIO

In 2007 Seoul, South Korea conglomerate Hanwha Group was looking for a location for a North American production facility for its L&C division, which produces HanStone quartz surfaces for residential and commercial applications. The company chose London, Ontario. The city offered access to high quality Ontario quartz, available serviced land, skilled workers, proximity to the U.S. market, a unique product-testing environment and superior educational facilities from which to draw skilled workers and an R&D team. Hanwha L&C began construction of a \$70 million, 200,000 sq.ft. facility in January 2008. The facility, which will also house the company's only R&D centre, will be up and running in July 2009 and will use state-of-the-art machinery for lean and green production. "We think London will prove to be the ideal location for us," says Daniel Yu, Hanwha L&C Canada's president, who adds that before construction even began the company was planning for two further expansions.

**STRATEGIC LOCATION** FOR MANUFACTURERS EAGER TO ENTER THE LUCRATIVE NORTH AMERICAN MARKET, ONTARIO PROVIDES THE IDEAL BASE. AND WE'RE WELL SITUATED FOR DOING BUSINESS WITH EUROPE AND ASIA TOO.

#### CONNECTED TO GLOBAL MARKETS

Our companies enjoy secure access to the North American market, including government procurement programs, through the North American Free Trade Agreement (NAFTA).

We have same-day business access within North America and to Europe. Our cultural and business affinities with the U.S., Europe and Asia smooth the way for international trade, investment and partnerships.

#### EFFICIENT TRANSPORTATION NETWORKS

Our transportation system can help move products quickly across the continent and around the world. Road, rail and marine networks connect to the U.S. at 15 border crossings. The Canada-U.S. SMART Border program is specifically designed to speed the passage of goods for manufacturers that operate with a high level of cross-border integration.

We have five international airports—Toronto, Hamilton, Ottawa, London and Thunder Bay. Toronto's Pearson International is served by more than 75 carriers offering non-stop service to 29 Canadian and 47 U.S. destinations and direct service to 76 other international cities.





# CENTRE FOR ADVANCED MATERIALS JOINING

## A GROWING GLOBAL FORCE



### BOTTOM LINE?

Ontario is uniquely equipped to meet the needs of the changing advanced manufacturing industry.

We have the people.

The technology.

The market access.

The business savvy.

Come and grow your business here.

Norman Zhou was a senior research engineer at the highly respected Edison Welding Institute, located in the Ohio State University Research Park, when he got a call from the University of Waterloo. Would Dr. Zhou be interested in returning to Ontario to build his own centre for welding and materials joining? The University of Toronto graduate didn't have to think twice. He jumped at the chance and today the centre he heads is a growing global force in welding technology research. With a staff of more than 40 researchers drawn from a variety of science and engineering disciplines, the Centre for Advanced Materials Joining works with industry in Ontario and abroad to develop new and innovative technologies for materials joining, crucial to future global competitiveness in the manufacture of industrial products. "It's no surprise we've been so successful," says Zhou. "We had a base of R&D to build on, some of the brightest minds in the world to draw from and tremendous support from the Ontario and Canadian governments."



## WE CAN HELP

Looking for site cost and availability data? Let us help you with:

- the latest information on Ontario's economy and business climate
- province-wide site searching of available land and buildings
- comprehensive profiles of Ontario municipalities
- coordination of site selection and community visits
- contacts with federal, provincial and municipal officials, utility companies, transportation organizations and business facilitators.



For more information about investing in Ontario,  
please visit us at:  
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